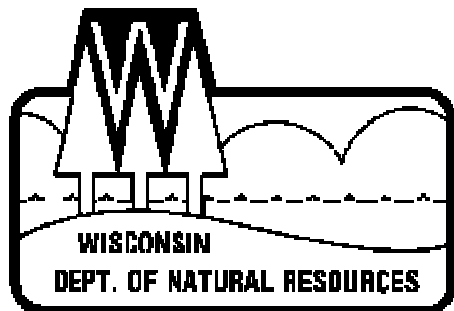
	<p align="center"><b>Swing-N-Slide Corporation Newco Fabrication Division</b></p> <p align="center"><b>Replacing Solvent-based Paints with Powder Paint</b></p>
<b>Standard Industrial Classification (SIC)</b>	Fabricated Metal Products/3449
<b>Type of Waste</b>	Paint
<b>Strategy</b>	Process Line Modification
<b>Company Background</b>	<p>Swing-N-Slide Corporation, Newco Fabrication Division, 1317 Barberry Drive, Janesville, Wisconsin, is the leading manufacturer of do-it-yourself swing sets in the nation. Newco is a custom fabricator, supplying a variety of industries with components and finished assemblies used in playground equipment, power tools, shelving, hardware and many other industrial and consumer products. Founded in 1982, the company utilizes over 32,000 square feet of manufacturing space, employing 50 full-time people.</p>
<b>Original Process</b>	<p>In October, 1989, Newco Fabrication installed a liquid spray paint system to replace the "dip" operation used there since 1987. This liquid spray system consisted of a 3-stage parts washer, a drying/curing oven and two opposing dry, downdraft paint booths, tied together by a 750 foot 4" I-beam conveyor.</p>
<b>Motivation</b>	<p>While more efficient than the previous process, it became apparent that spray painting also had its disadvantages: air emissions were not in compliance and equipment clean-up and color changes generated a lot of hazardous waste. In 1992, the last year the company spray painted, over \$41,000 was spent to dispose of 38,350 pounds of hazardous waste from painting. The Wisconsin Department of Natural Resources began enforcement for air permit noncompliance and classified the facility as a large quantity generator of hazardous waste.</p>
<b>Pollution Prevention Process</b>	<p>Using educational programs and technical assistance provided by the University of Wisconsin-Extension, Newco Fabrication managers incorporated pollution prevention technology in its painting department. In January 1993, a Nordson NHC-S8 Down Draft Powder Booth was installed to replace the liquid paint system. The system featured ten automatic and two manual paint guns. This allows the powder to adhere to the metal parts electrostatically. The finish is made permanent by baking parts in an oven.</p>
<b>Material/Energy Balance</b>	<p><b>Hazardous Waste Reduction Achieved (annually):</b></p> <ul style="list-style-type: none"> <li>• 100% of oversprayed liquid paint</li> <li>• 100% of solvent cleaners and paint sludge</li> <li>• 33,550 pounds of hazardous waste</li> <li>• 22,500 pounds of VOC emissions</li> </ul> <p>The facility has been reclassified as a very small quantity generator of</p>

	<p>hazardous waste. Material usage represents a major savings over liquid paint, since most powders are sprayed at a 96% efficiency rate, as opposed to 50% efficiency in liquid paint. The remaining 4% waste powder is captured, containerized and sold to another firm using powder paint.</p> <p><b>Original Process</b></p> <p><b>Feedstock</b> 5,544 gallons of paint</p> <p><b>Waste</b> 38,350 lbs</p> <p><b>Energy Use</b> 300 degree cure temperature Disposal</p> <p><b>Pollution Prevention Process (as of 10/30/93)</b></p> <p><b>Feedstock</b> 22,895 lbs of powder (equivalent to 7,632 gallons of paint)</p> <p><b>Waste</b> 4,800 lbs</p> <p><b>Energy Use</b> 400 degree cure temperature Disposal</p>
<b>Economics</b>	<p><b>Capital Costs</b> \$200,000 for powder paint booth.</p> <p><b>Operational/Maintenance Costs</b> Savings of at least \$140,670 per year: At least \$41,000 per year savings is due to elimination of hazardous waste streams, \$99,670 per year savings on labor and materials including \$23,000 per year is saved on paint filter cleaning. Production output tripled.</p> <p><b>Payback Period</b> 14 months</p>
<b>Benefits</b>	<p>Powders are currently producing superior quality coatings for a variety of applications in the architectural, automotive, appliance, furniture, electrical, electronic, lighting fixture, pipe, outdoor equipment, wire goods, and general metal finishing markets. The cost savings and environmental benefits associated with solvent-free powder coatings are an added benefit beyond the fact that the powder coating process produces a superior finish and increases customer satisfaction. Powder produces exceptionally tough coatings that do not sag, run or drip during application. The use of higher molecular weight resins also enables powder coatings to demonstrate high impact resistance, resulting in lower</p>

	rejection rates in industries where paint chipping has historically been a problem. Additionally, employees feel that their working conditions have improved by eliminating solvents and minimizing exposure to dust.
<b>Obstacles</b>	<p>Virtually no problems in the installation and operation of its powder paint line were encountered. Most of the minor problems that did occur were due to lack of employee training using the new paint booth.</p> <p>Powder coatings do not have universal application properties. Wisconsin businesses may consider effective alternative solutions for achieving hazardous waste reduction in their painting operations if powder coatings do not work.</p>
<b>Technology Transfer</b>	The company has an open door policy on its powder system. Tours for potential powder users have been conducted, a feature newspaper article appeared in the Janesville Gazette and organizations such as the Rock County Pollution Prevention Project, the University of Wisconsin and the Chemical Coaters Association International have spread the word on the benefits of powder painting.
<b>Company Address</b>	Swing-N-Slide Corporation Newco Fabrication Division 1317 Barberry Drive Janesville, Wisconsin 53545
<b>Contact Person</b>	Charlie Boudon, Manufacturing Manager 608/755-4774
<b>Additional Resources</b>	"Powder Coating" Magazine 1300 East 66th Street Minneapolis, Minnesota 55423 612/866-2242 612/866-1939 FAX
<b>Pollution Prevention Resources</b>	<p><b>Free, On-site Technical Assistance</b> University of Wisconsin Extension Solid and Hazardous Waste Education Center Milwaukee area: 414/475-2845 Remainder of state: 608/262-0385</p> <p><b>Pollution Prevention Information Clearinghouse</b> Wisconsin Department of Natural Resources Cooperative Environmental Assistance 608/267-9700 or e-mail: cea@dnr.state.wi.us</p>



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